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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,697	04/05/2005	Sandra Hintz	5003073.059US1	9659

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EXAMINER	
WINKLER, MELISSA A	

ART UNIT	PAPER NUMBER
1796	

NOTIFICATION DATE	DELIVERY MODE
03/05/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/520,697	HINTZ ET AL.	
	Examiner	Art Unit	
	MELISSA WINKLER	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 November 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14 and 16-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14 and 16-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 – 3, 5, 6, 8 – 10, 12 - 14, and 16 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,985,434 to Qin et al. in view of WO 00/52087 to Hänhle et al. For convenience, the citations below for Hähnle et al. are from the English-language equivalent of this document, US 6,750,262.

Regarding Claim 1. Qin et al. teach a process of preparing a water-absorbent foam by forming an aqueous composition/solution in which a soluble polymer is dissolved in a solvent comprising atleast 30 weight percent water (Column 3, Lines 3 – 29 and Column 10, Lines 1 - 28). The soluble polymer may be, for example, polyacrylic acid (Column 3, Lines 37 – 67). The solution may further comprise a crosslinking agent and optional components, such as surfactants (Column 6, Line 63 - Column 7, Line 3; Column 10, Lines 36 - 38).

A blowing agent is also added to the solution and subsequently initiated to form an absorbent foam (Column 10, Lines 1 – 7). The recovered foam may subsequently undergo a further treatment in which the polymer is heated to a temperature between about 50°C to about 250°C to achieve a desired degree of crosslinking (Column 14, Lines 33 – 55).

While Qin et al. do teach that the absorbent foam comprises an insubstantial amount of solvent and indicate the solvent may be up to 100 weight percent water (Column 4, Lines 46 – 50), Qin et al. do not expressly teach the content of water is adjusted to not more than 15% weight of the foam. However, Hänhle et al. also teach a water-absorbent foam wherein the water content in the foam is adjusted to 1 – 60% by weight of the composition (Column 3, Lines 64 – 67). Qin et al. and Hänhle et al. are analogous art as they are from the same field of endeavor, namely water absorbent foams prepared from polymers derived from ethylenically unsaturated monomers such as acrylic acid. At the time of invention, it would have been obvious to a person of ordinary skill in the art to adjust the water content in the foam taught by Qin et al. to an amount in the range taught by Hänhle et al. The motivation would have been that a superabsorbent foam with a water content in the range taught by Hänhle et al. would be suitable for use in applications such as hygiene articles (Hänhle et al.: Column 19, Lines 7 – 14).

Regarding Claim 2. Qin et al. teach the process of Claim 1 wherein the polymer of the aqueous composition has a molecular weight of greater than about 10,000 g/mol (Column 4, Lines 19 - 27).

Regarding Claim 3. Qin et al. teach the process of Claim 1 but are silent regarding the foam liter weight of the final composition. However, Hähnle et al. also teach an absorbent foam prepared with a density preferably in the range of 0.05 to 0.5 g/cm^3 (50 – 500 g/l) (Column 17, Lines 61 – 62). At the time of invention, it would have been obvious to a person of ordinary skill in the art to add a blowing agent to the solution taught by Qin et al. such that the density of the foam product would fall in the range taught by Hänhle et al. The motivation would have been that absorbent foams with a density in the range taught by Hänhle et al. would be useful in applications such as hygiene articles (Hänhle et al.: Column 19, Lines 7 – 14).

Regarding Claim 5. Qin et al. teach a water-absorbent, foam-type polymer structure prepared from the process of Claim 1 (Column 3, Lines 3 – 29).

Regarding Claim 6. Qin et al. teach the polymer structure of Claim 5 may have an Absorbency Under Load value (i.e. the amount in grams of an aqueous solution, containing 0.9 weight percent sodium chloride, a gram of material can absorb under a load of about 0.3 pounds per square inch) of atleast about 10 grams per gram and up to about 100 grams per gram of absorbent foam (Column 7, Lines 48 – 54).

Regarding Claims 8 and 17. Qin et al. teach a disposable absorbent composite product comprising the absorbent structure of Claim 5 positioned between a liquid-permeable top sheet and a back sheet (Column 15, Lines 58 - 65).

Regarding Claims 9, 10, and 14. Qin et al. teach the process of Claim 8 but do not expressly teach the foamed composition is brought into contact with substrate and then heated to a temperature of from about 50 to about 300°C, so that the polymer crosslinks atleast partially and the content of water is adjusted to not more than 15 percent weight. However, Hänhle et al. also teach a composite wherein an absorbent foam is applied to a substrate, such as a sheet composed of polymers, metals, nonwovens, fluff, tissues, woven fabric, natural or synthetic fibers, or other foams (Column 13, Lines 13 – 2- and 31 - 40). The composite then undergoes a heat-treatment at a temperature in the range of 20 to 180°C (Column 13, Lines 38 – 40 and 60- 62). According to Qin et al., heat-treating the polymer foam at a temperature between about 50 to 250°C will initiate crosslinking (Column 14, Lines 53 – 55). Hänhle et al. further teach the water content in the foam after the heat treatment is between 5 – 80% by weight (Column 3, Lines 64 – 67). The polymeric foam may be immobilized on the substrate, for example when the two are joined together as a composite with a sandwich-like structure (Column 13, Lines 31 – 37). At the time of invention, it would have been obvious to a person of ordinary skill in the art to use the process taught by

Hänhle et al. to form the composite taught by Qin et al. The motivation would have been that process taught by Hänhle et al. is useful in preparing composite materials suitable as diapers, sanitary towels, etc. (Hänhle et al.: Column 19, Lines 7 – 14).

Regarding Claims 12, 13, and 18. Qin et al. teach the process of Claim 8 but do not expressly teach a portion of the surface of the water-absorbent foam structure is brought into contact with a portion of the surface of the substrate and immobilized upon it. However, Hänhle et al. also teach a composite wherein an absorbent foam is applied to a substrate, such as a sheet composed of thermoplastic polymers such as polyethylene or polypropylene (Column 13, Lines 15 - 18 and 31 - 40). At the time of invention, it would have been obvious to a person of ordinary skill in the art to use the process taught by Hänhle et al. to form the composite taught by Qin et al. The motivation would have been that process taught by Hänhle et al. is useful in preparing composite materials suitable as diapers, sanitary towels, etc. (Hänhle et al.: Column 19, Lines 7 – 14).

Regarding Claim 16. Qin et al. teach a disposable absorbent composite product comprising the absorbent structure of Claim 5.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,985,434 to Qin et al. in view of WO 00/52087 to Hähnle et al., as applied to Claim 1 above, and further in view of US 6,001,911 to Ishizaki et al.

Regarding Claim 4. Qin et al. teach the process of Claim 4 but do not expressly disclose a step in which this structure is smoothed. However, Ishizaki et al. also teach a method of making an absorbent resin in which a crosslinked polymer composition is prepared and then calendared, so that the resultant absorbent product has at least one smooth surface (Abstract). Qin et al and Ishizaki et al. are analogous art as they are from the same field of endeavor, namely absorbent polymeric compositions. At the time of invention, it would have been obvious to a person of ordinary skill in the art to smooth the foam taught by Qin et al. The motivation would been that a foam with a smoothed surface would provide advantages such as comfort to the wearer of an article, for example a diaper, containing this foam.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,985,434 to Qin et al. in view of WO00/52087 to Hähnle et al., as applied to Claims 1, 8, and 9 above, and further in view of US 6,033,769 to Brueggemann et al.

Regarding Claim 11. Qin et al. teach a process for preparing a composite but do not expressly disclose that templates are used during the application of the polymeric

foam to a substrate. However, Brueggemann et al. also disclose a method for preparing a water-absorbent polymeric foam and then applying it to a substrate using a template (Column 3, Lines 41 – 49). Qin et al. and Brueggemann et al. are analogous art as they are from the same field of endeavor, namely water-absorbent polymeric foams. At the time of invention, it would have been obvious to a person of ordinary skill in the art to use templates to form the foam composition taught by Qin et al. to a substrate. The motivation would been that the templates would be useful in applying the foam only within a specified area on the substrate (Brueggemann et al, Column 3, Lines 41 – 49).

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,985,434 to Qin et al. in view of WO00/52087 to Hähnle et al., as applied to Claim 1 above, and further in view of US 2001/0024716 to Chen et al.

Regarding Claim 19. Qin et al. teach the process of Claim 1 but do not expressly teach one or more of the blowing agent is selected from inorganic salts or organic compounds capable of decarboxylation. However, Chen et al. also teach an absorbent foam wherein the blowing agent used to prepare the foam may be a citric acid mixture (Paragraph 149). Qin et al. and Chen et al. are analogous art as they are from the same field of endeavor, namely water-absorbent foams. At the time of invention, it would have been obvious to a person of ordinary skill in the art to use citric acid as a blowing

agent in the foam taught by Qin et al. The motivation would have been that citric acid as a blowing agent provides advantages such as promoting both expansion and crosslinking of fiber additives in a foamable composition (Chen et al.: Paragraph 112).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,985,434 to Qin et al. in view of WO 00/52087 to Hänhle et al. For convenience, the citations below for Hähnle et al. are from the English-language equivalent of this document, US 6,750,262.

Regarding Claim 7. Qin et al. teach a water-absorbent, foam-type polymer structure comprising a water-swellable, water-insoluble polymer such as polyacrylic acid (Column 3, Lines 3 – 67). The polymer is present in the absorbent foam in an amount between 50 weight percent to 100 weight percent, based upon the total weight of the polymer, any crosslinking agent and any other optional components present in the absorbent foam (Column 4, Lines 30 - 43). Qin et al. further teach crosslinking agents may be used in an amount of from about 0.01 weight percent to about 20 weight percent, based on the total weight of the polymer and crosslinking agent present in the absorbent foam (Column 6, Lines 45 - 52). Qin et al. additionally teach additives may be used in an amount of less than about 1 weight percent up to less than about 10 weight

percent based upon the total weight of the polymer, any crosslinking agent and any other optional components present in the absorbent foam (Column 7, Lines 7 – 14).

While Qin et al. do teach that the absorbent foam comprises an insubstantial amount of solvent and the solvent may be up to 100 weight percent water (Column 4, Lines 46 – 50), Qin et al. do not expressly teach the content of water is adjusted to not more than 15% weight of the foam. However, Hänhle et al. also teach a water-absorbent foam wherein the water content in the foam is adjusted to 1 – 60% by weight of the composition (Column 3, Lines 64 – 67). Qin et al. and Hänhle et al. are analogous art as they are from the same field of endeavor, namely water absorbent foams prepared from polymers derived from ethylenically unsaturated monomers such as acrylic acid. At the time of invention, it would have been obvious to a person of ordinary skill in the art to adjust the water content in the foam taught by Qin et al. to an amount in the range taught by Hänhle et al. The motivation would have been that a superabsorbent foam with a water content in the range taught by Hänhle et al. would be effective for use in applications such as hygiene articles (Hänhle et al.: Column 19, Lines 7 – 14).

Qin et al. teach the polymer structure of Claim 5 may have an Absorbency Under Load value (i.e. the amount in grams of an aqueous solution, containing 0.9 weight percent sodium chloride, a gram of material can absorb under a load of about 0.3

pounds per square inch) of atleast about 10 grams per gram and up to about 100 grams per gram of absorbent foam (Column 7, Lines 48 – 54).

Qin et al. are silent regarding the absorption speed of the foam. Consequently, the Office recognizes that all of the claimed effects or physical properties are not positively stated by the reference(s). However, the reference(s) teaches all of the claimed ingredient(s) and process limitation(s). Therefore, the claimed effects and physical properties, i.e. an absorption speed of more than about 2 g/g/sec, would implicitly be achieved by a composition with all the claimed ingredients. If it is the applicant's position that this would not be the case: (1) evidence would need to be provided to support the applicant's position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain the claimed properties with only the claimed ingredients and process steps.

Response to Arguments

Applicant's arguments filed November 26, 2008 have been fully considered but they are not persuasive because:

A) Applicant argues that Qin et al. does not teach or suggest the use of a surfactant, citing Column 9, Lines 41 – 48 of the reference. However, this section does not prohibit the use of surfactants; rather, it suggests that a surfactant does not need to

be used to render the foam hydrophilic. Qin et al. also indicate that surfactants are optional additives in the composition which do not adversely effect the desired properties of the absorbent foam (Column 6, Line 63 - Column 7, Line 3; Column 10, Lines 36 - 38). It is consequently the Office's position that Qin et al. do expressly teach the use of surfactants in their process.

B) Regarding applicant's argument that Qin et al. teach freezing the foam and the use of a vacuum to sublime the frozen solvent, such steps are nowhere excluded by the instant claims which sets forth a process "comprising" a list of steps.

C) Regarding applicant's argument that Hänhle et al. does not teach the foaming and crosslinking of an aqueous composition comprising one of more polymers as claimed in Claim 1, these limitations are taught by Qin et al.

D) Regarding applicant's argument that claimed water content cannot be derived from Hänhle et al., the Office recognizes that Hänhle et al. initially teach adjusting the water content to 1 – 60% by weight of the composition (Column 3, Lines 64 – 67). However, Hänhle et al. go on to teach the residual moisture/water content is adjusted to preferably 1 – 15% since the foams are hygroscopic and will absorb moisture from the air. Accordingly, it is the Office's position that Hänhle et al. do teach the claimed water content with sufficient specificity.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELISSA WINKLER whose telephone number is (571)270-3305. The examiner can normally be reached on Monday - Friday 7:30AM - 5PM E.S.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571)272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/ MW
Supervisory Patent Examiner, Art Unit 1796 February 25, 2009